

## **VACUUM CHAMBER LOAD LOCK STRUCTURE AND ARTICLE TRANSPORT MECHANISM**

### **ABSTRACT OF THE DISCLOSURE**

A vacuum chamber used for processing articles, such as integrated circuit wafers, display panels, and the like, has a small load lock chamber formed at an opening in a wall of the chamber by a moveable article supporting surface within the chamber and a cover outside of the chamber. The supporting surface and cover are sealed to the chamber wall when urged against it. Articles placed into the load lock chamber, when the cover is opened, are moved into the vacuum chamber for processing by moving the supporting surface away from the wall after the cover has been closed and a vacuum established in the load lock chamber. Articles are removed from the vacuum chamber in a reverse manner. Various mechanisms are describe for moving the articles, including a particular robotic device that simultaneously swaps the positions of two articles between the supporting surface and a processing location within the vacuum chamber by first pulling the articles together and then rotating them in a half-circle. Integrated circuit wafers are preferably carried on a domed surface formed of wedge shaped pieces fit together on a frame, where the wedge shaped pieces and their wafers are individually removable from the frame for transfer to another frame at a different location.